
# Redflow Strategy Update

March 2024

# Disclaimer

This presentation has been prepared by Redflow Limited ("**Redflow**"). It contains general information about Redflow as at the date of this presentation. The information in this presentation should not be considered to be comprehensive or to comprise all of the material which a shareholder or potential investor in Redflow may require in order to determine whether to deal in shares. The information in this presentation is of a general nature only and does not purport to be complete.

This presentation does not take into account the financial situation, investment objectives, tax situation or particular needs of any person and nothing contained in this presentation constitutes investment, legal, tax or other advice, nor does it contain all the information which would be required in a disclosure document or prospectus prepared in accordance with the requirements of the *Corporations Act 2001 (Cth)*.

Readers or recipients of this presentation should, before making any decisions in relation to their investment or potential investment in Redflow, consider the appropriateness of the information having regard to their own objectives and financial situation and seek their own professional legal and taxation advice appropriate to their particular circumstances.

This presentation is for information purposes only and does not constitute or form part of any offer, invitation, solicitation or recommendation to acquire, purchase, subscribe for, sell or otherwise dispose of, or issue, any shares. Further, this presentation does not constitute investment advice, nor shall it or any part of it or the fact of its distribution form the basis of, or be relied on in connection with, any contract or investment decision.

Certain statements in this presentation are forward-looking statements. You can identify these statements by the fact that they use words such as "anticipate", "estimate", "expect", "project", "intend", "plan", "believe", "target", "may", "assume" and words of similar import. Indications of, and guidance on, future earnings and financial position and performance are also forward-looking statements.

Forward-looking statements, opinions and estimates provided in this presentation are based on assumptions and contingencies which are subject to change without notice, as are statements about market and industry trends, which are based on interpretations of current market conditions.

Forward-looking statements, including projections, guidance on future earnings and estimates, are provided in this presentation as a general guide only and should not be relied on as an indication or guarantee of future performance. Forward-looking statements are based on current expectations and beliefs and, by their nature, are subject to a number of known and unknown risks and uncertainties that could cause the actual results, performances and achievements to differ materially from any expected future results, performances or achievements expressed or implied by such forward-looking statements. No representation, warranty or assurance (express or implied) is given or made by Redflow that the forward-looking statements contained in this presentation are accurate, complete, reliable or adequate or that they will be achieved or prove to be correct.

Subject to any continuing obligation under applicable law or relevant listing rules of the ASX, Redflow disclaims any obligation or undertaking to disseminate any updates or revisions to any forward-looking statements in this presentation to reflect any change in expectations in relation to any forward-looking statements or any change in events, conditions or circumstances on which any such statements are based. Nothing in this presentation shall under any circumstances create an implication that there has been no change in the affairs of Redflow since the date of the presentation.

Except for any statutory liability which cannot be excluded, Redflow and its respective officers, employees and advisers expressly disclaim all liability (including negligence) for any direct or indirect loss or damage which may be suffered by any person in relation to, and take no responsibility for, any information in this presentation or any error or omission therefrom, and make no representation or warranty, express or implied, as to the currency, accuracy, reliability or completeness of this presentation.

By attending an investor presentation or briefing, or by accepting, accessing or reviewing this presentation, you acknowledge and agree to the terms set out in this disclaimer.

# Redflow profile

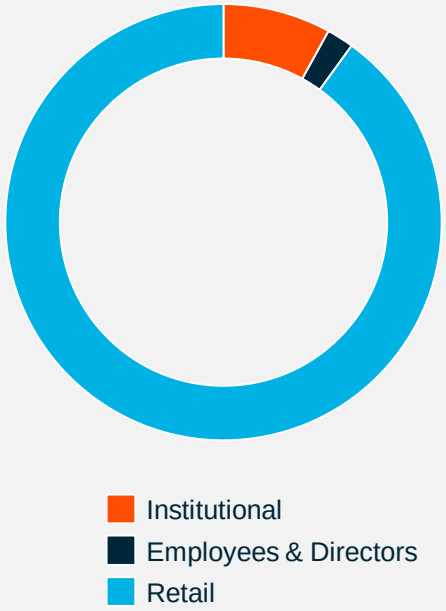
## Financial overview

| | |
|---|---|
| **Ticker** | RFX.ASX |
| **Share price**[1] | $0.155 |
| **Shares on issue**[1] | 237.1m |
| **Market cap**[1] | $36.7m |
| **Cash and cash equivalents**[2] | $6.9m |
| **Debt**[2] | Zero |

## Operational overview[1]

| | |
|---|---|
| **Headquarters** | Brisbane |
| **Employees** (Aus, US, Thailand) | 110 |
| **Manufacturing** | Thailand |
| **Active deployments** | ˜ 270 |
| **Storage capacity delivered** | > 3.2 GWh |
| **Cumulative operating hours** | > 24 million |

## Shareholder structure[3]




## Board

**Brett Johnson**
Independent Non-Executive Chairman

**Adele Fraser**
Independent Non-Executive Director

**John Lindsay**
Independent Non-Executive Director

**David Brant**
Independent Non-Executive Director

**Tim Harris**
CEO & Managing Director

Board members and Senior Executives listed in Appendix

1. As at 8 March 2024
2. As at 29 February 2024
3. As at 12 February 2024

redflow

# Executive summary

## Vision

To be a global leader in clean energy storage, paving the way to a sustainable future.

## Product

Redflow manufactures zinc-bromine flow batteries, a technology that plays a key role in the clean energy transition due to its ability to store energy for extended durations, and because it is amongst the most fire-safe and sustainable batteries on the market.

## Addressable market

Global decarbonisation efforts and the growing penetration of renewables is accelerating the need for energy storage. Our opportunity set is huge with over 85 TWh of LDES demand required by 2040[1]. Queensland alone requires over 48 GWh of LDES capacity by 2035[2].

## Quality customers

U.S. Department of Energy · acciona · Energy Queensland · Australian Government Bureau of Meteorology · OPTUS

## Drivers of success

1. Commercialised technology with millions of hours of operational experience, with quality customers.
2. Strong pipeline of demand from large utility and government counterparties.
3. Market intelligence and insight into commercial, product and scale requirements of energy storage users, from deep customer engagement on projects.
4. Our plan positions us to succeed for customers and shareholders.

## Catalysts

Commercial – convert near-term pipeline.

Manufacturing – maximise Thailand factory output and complete feasibility study for new advanced manufacturing facility in Queensland.

Product evolution – design, specifications and tooling for the new X10 battery designed for ease of deployment and low costs in utility-scale installations – the natural product evolution from our current system.

Finance – progress discussions with Government grant and finance agencies.

1. Cumulative energy installed capacity from LDES Council: *Net Zero Power,* 2021
2. Queensland SuperGrid Infrastructure Blueprint, September 2022 using 8-hour duration for GWh

# Clear and consistent strategy

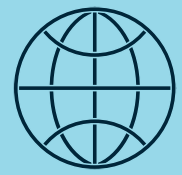
## Will continue to deliver growth in FY24 and beyond

### ENERGY FOCUSED APPLICATIONS

+ Solar/wind + storage, renewables integration.
+ Medium to long duration focus – 8+ hours.
+ Industries and applications where safety paramount (e.g. mining).
+ Leverage hibernation and duration attributes.

### COMMERCIAL AND INDUSTRIAL (C&I) CUSTOMERS

+ Small C&I deployments 1+ MWh.
+ Medium to larger C&I deployments – behind the meter focus 2 – 50 MWh.
+ Promote unique fire safety vs lithium.
+ Basis to move into grid-scale opportunities – 50 MWh+.

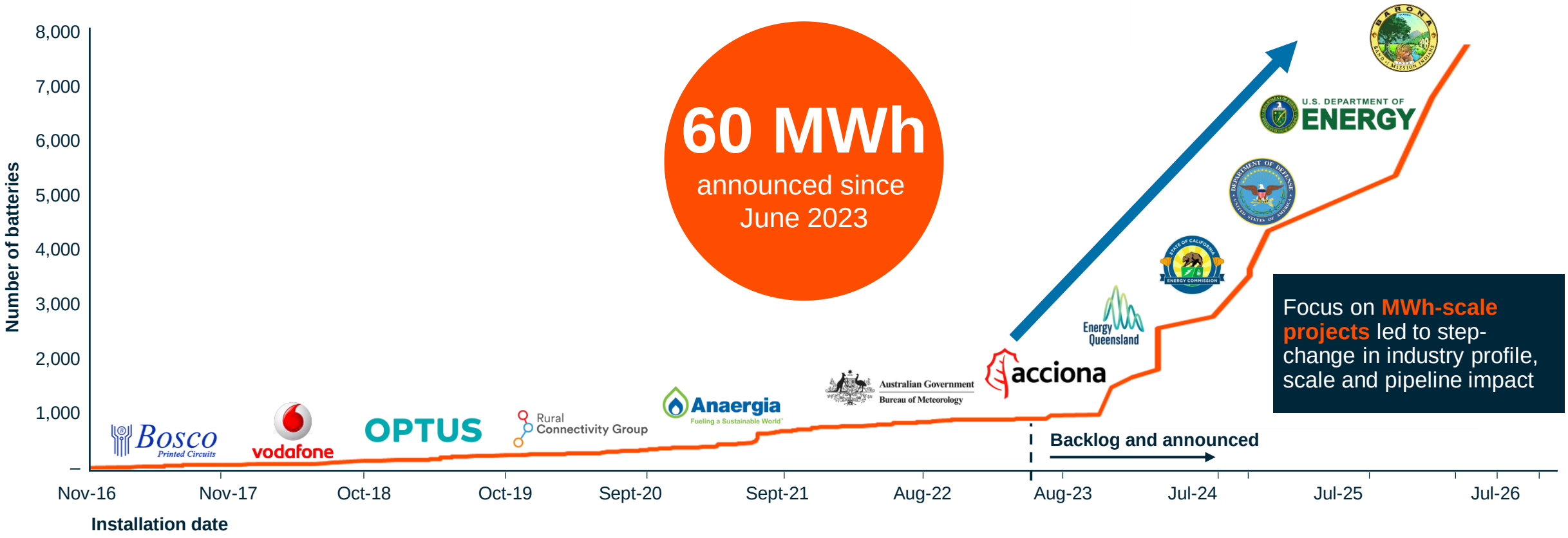


### US AND AUSTRALIA AS CORE MARKETS

+ US – California and other markets with large LDES energy storage needs and drive for diversification.
+ Queensland Government energy storage strategy supporting acceleration of ambition.
+ Continued growth of opportunities in the broader Australian market.
+ Pursue deals in other markets where opportunity is compelling.

# Our strategy has enabled our transition to a credible multi-MWh technology in some of the most exciting global LDES markets

## Redflow Battery Installations, 2016–2026, current view[1]




| Small – Med. kWh | 500 kWh – 2 MWh | Multi MWh |
|---|---|---|

Sources: Company information.

1. Note that installations are based on deployed systems to 30th August 2023 and the current expected deployment schedule of announced projects. The specific delivery timetable of announced projects is subject to final contracting, implementation, production, logistics timetables and other factors outside our control and therefore may be subject to change

# Key projects on track for delivery and revenue

| | | | Financial impact[1] |
|---|---|---|---|
| | **Paskenta Microgrid project** 15 MWh | Phase One adjusted based on final budget allocation. Final notice to proceed received Feb 24. Kick off deployment meeting early March 2024 | ~$12.5m in FY25[2] |
| | **Energy Queensland project** 4 MWh | Engineering and design continuing with signing of the MSA expected March 2024. Target installation remains on track to be in H1 FY25. | ~$2.5m in FY24/25[3] |
| | **Acciona project** 200 kWh | BESS has been delivered to Acciona site in Spain. Commissioning underway and expected to be complete in late March 2024 | ~$150k in FY24[2] |
| | **US DOD Microgrid project** 1.2 - 1.4 MWh | Engineering and design on track to meet the US DOD milestones. System delivery and commissioning expected in Q3 2024. | ~$1.7m in FY25[2] |
| | **US DOE Valley Childrens Hospital project** ~34 MWh | Negotiations across all parties continuing. Expect final contracting to be finalised in H1 FY25. Engineering and design is progressing, with the delivery timetable expected over FY26/7. | ~$25m in FY26/7[3] |
| | **Barona LDES project** 6.6 MWh | Project team contract negotiation is continuing with CEC. Final contracting anticipated in H1 FY25. Expected delivery timetable FY26. | ~$5m in CY25/26[3] |

redflow

*1 Estimates only. Specific revenue and timing of recognising revenue to be confirmed at time of final contracting, and other factors such as production/delivery milestones.*
*2. Expected revenue.*
*3. Revenue opportunity..*

# High utilisation of our current battery and factory is our platform for continued success in the short term

Thailand factory is established, ISO 9001 accredited and has been manufacturing since 2019 with capacity to produce up to 40 MWh pa.

ZBM3 is the current core battery unit based on product evolution and commercial adoption over the past decade.

Pod200 is the commercial sales product, housing 20 ZBM3 batteries, iterated for scale to match each project sizing.

**These established and current assets will continue to be the basis for our pipeline conversions in 2025-2026**

The manufacturing and operation of these assets is established and ready to scale[1]

Production is on-track with scale-up plans proceeding for 20 MWh pa and 40 MWh pa thresholds[1]

**Asset utilisation is a key objective to maximise efficiencies as we increase production**

Scope to further increase beyond 40 MWh based on customer demand[1]

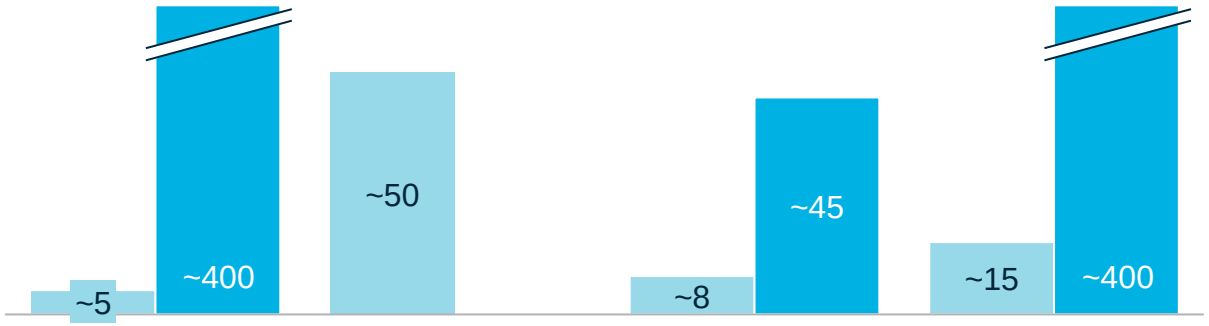
Utilise Thailand to test new X10 production techniques and product iterations

1. Redflow H1 Results Presentation

# Near term opportunities support short term momentum and underpin large-scale demand

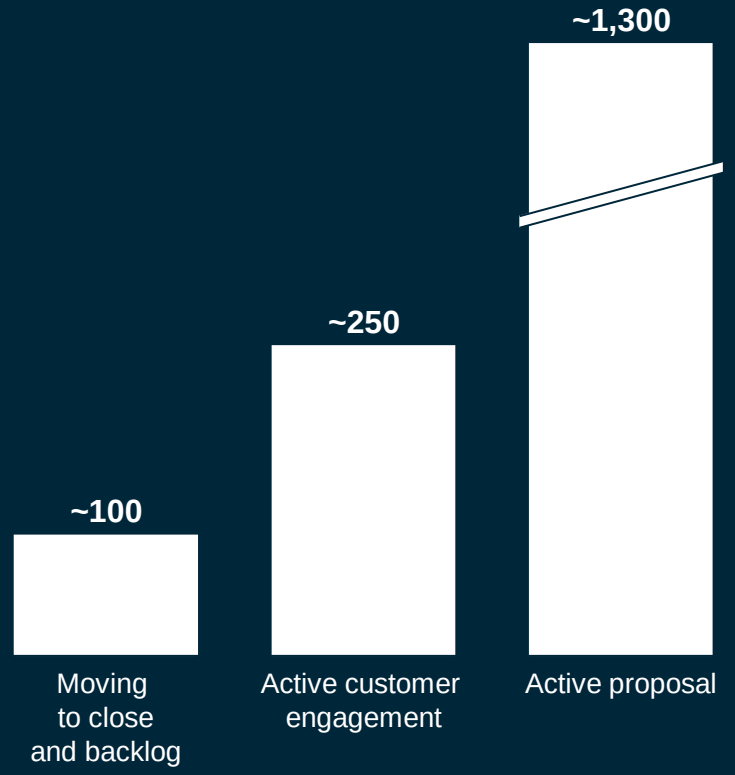
## Large customers with significant storage needs looking to undertake initial projects

### Key opportunities in discussion with key selected customers within indicative timeframes, MWh




| | Australian utility #1[2] | Australian utility #2[2] | 'Fortune 500' US Financial Services[2] | California Energy Commission[3] |
|---|---|---|---|---|
| **Estimated long-term RFX opportunity,** MWh | **~3,000** | **~1,000** | **~400** | **~10,000** |
| | Energy generator taking a leading position in building capacity for renewables on a reliable electricity grid. | Clean-energy focused utility installing an LDES capacity on the grid. Has specifically excluded Li-Ion from these projects. | Multi-national with firm net-zero commitments, looking to add energy resilience and decarbonise their real estate footprint. | A leading global adopter of LDES technologies, the CEC is advancing projects it views as critical to the state achieving its decarbonisation goals. |

### Full project pipeline by development stage[1], excluding prospects, MWh




1. Later stage pipeline is unweighted
2. Pipeline opportunities and direct customer engagements
3. Pipeline opportunities and "RFI for LDES Demonstration Solicitation", CEC, February 16, 2024. Note: next 12 months figures includes announced projects

redflow

# Our understanding of customer needs is core to our product evolution

| Purchase considerations | Customers are telling us what they want… | … is aligned with Redflow's product evolution |
|---|---|---|
| **Cost (CAPEX and LCOS)** | Cost is at the **forefront** of decision-making | Market Competitive product CAPEX<br>Competitive LCOS |
| **Energy capacity** | **Scalability** is key | Modular solution |
| **Duration** | 8+ hours is the **minimum** | 8+ hours and hibernation mode |
| **Footprint/ Form factor** | Constraint is the **infrastructure or logistics** needed | Energy-dense solution; form factor efficiency for optimal install cost |
| **Technological risk** | Technology needs to be **operationally proven** | Successful and extensive operational track record |
| **Safety** | Safety is a **must** | Compliance to baseline safety requirements; enhanced fire safety |

*Redflow provides a **sophisticated and understood product that scales to the application**..... Redflow is helping us pursue 24/7 Carbon Free Energy across our global portfolio*

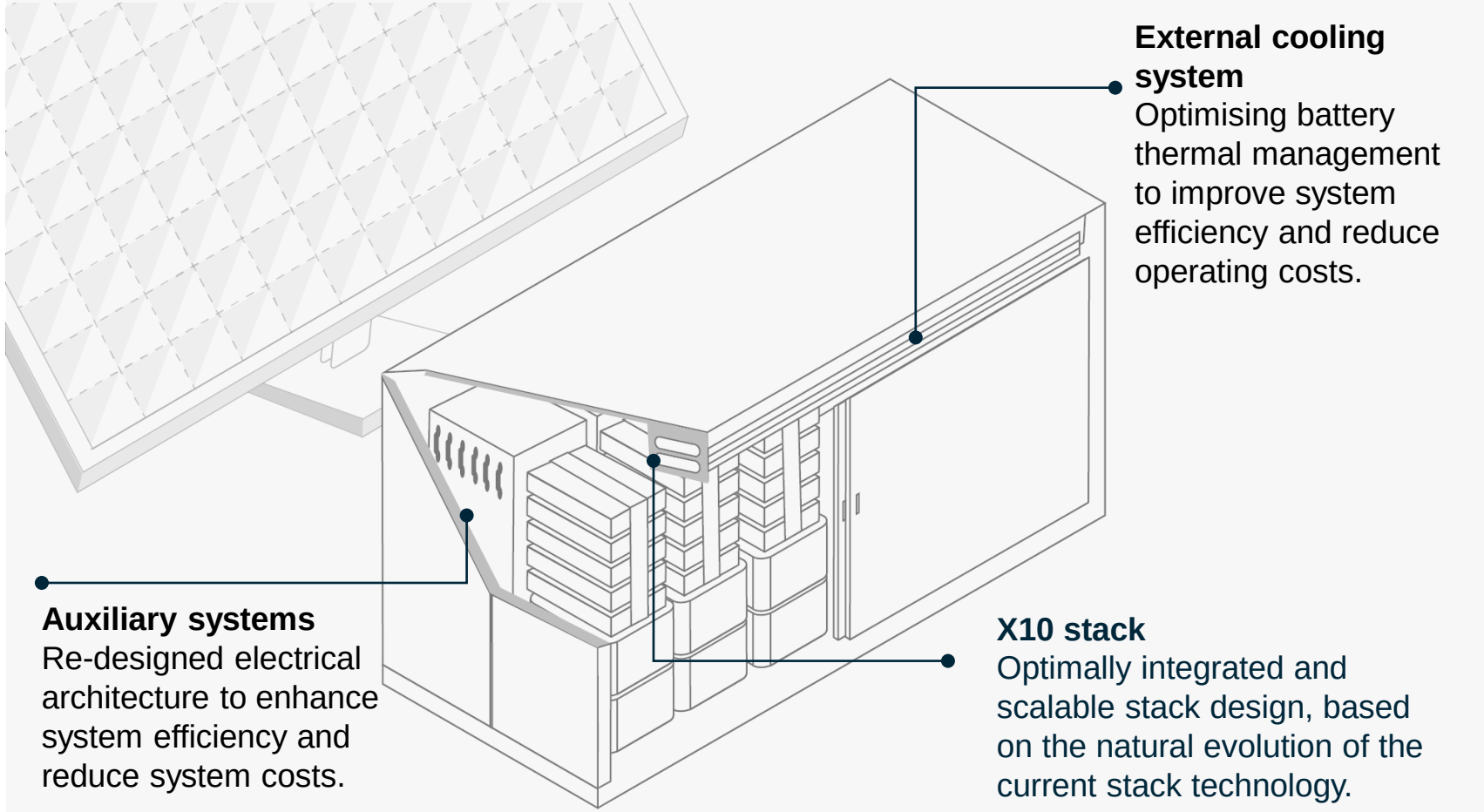
**'Fortune 500' US Financial Services Company**

redflow

Source: Customer interviews, customer feedback

# X10 is the natural evolution of our current systems and designed for larger scale projects

ILLUSTRATIVE DESIGN



**External cooling system**
Optimising battery thermal management to improve system efficiency and reduce operating costs.

**Auxiliary systems**
Re-designed electrical architecture to enhance system efficiency and reduce system costs.

**X10 stack**
Optimally integrated and scalable stack design, based on the natural evolution of the current stack technology.

## Key customer requirements met by X10

Natural **product evolution of Pod200/ZBM3**, e.g., chemistry and stack technology, which have extensive operational track record

**Market Competitive** product **CAPEX**

**8h+** duration

**MWh+** scale

Modular design for **rapid scalability**

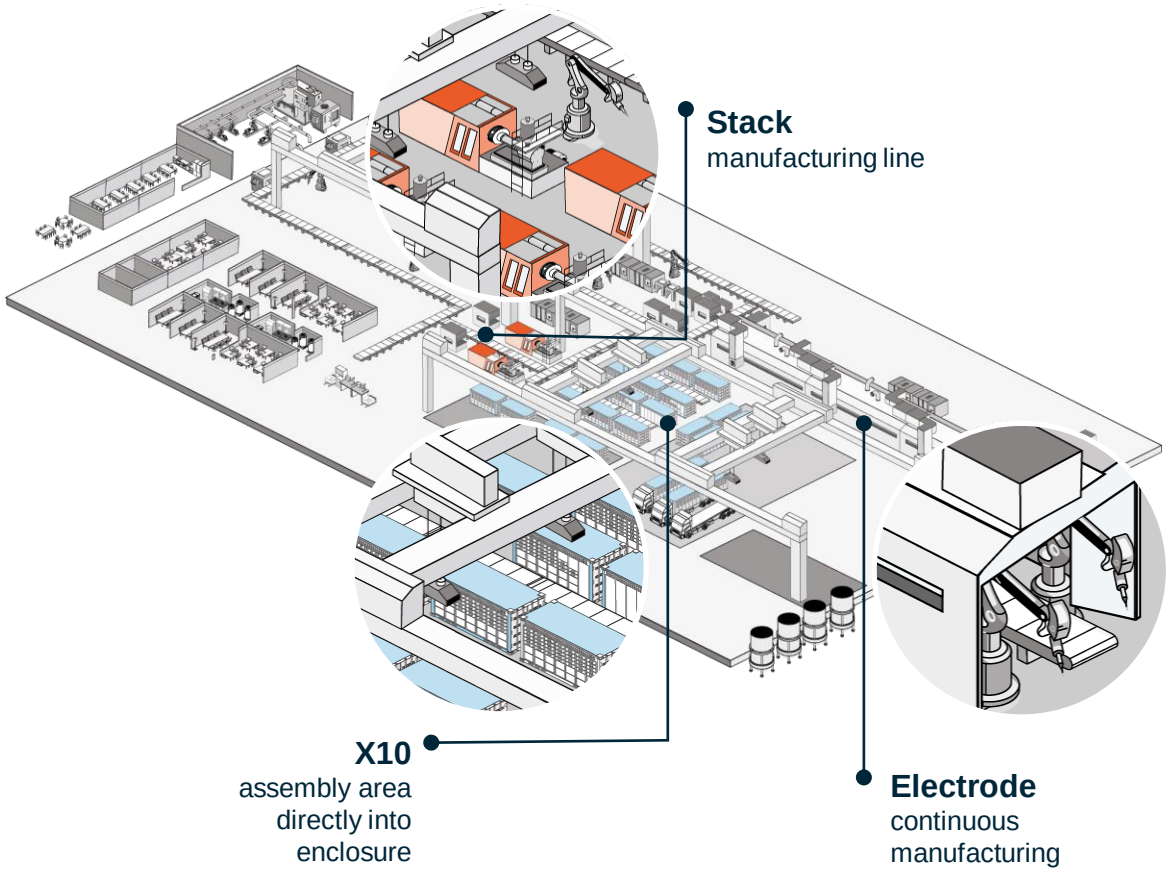
Designed and manufactured for **ease of maintainability** in the field for O&M efficiency

**Turnkey solution** for ease of transportation, field deployment and low installation costs – *key customer requirement*

redflow

# Planning commenced for new advanced manufacturing facility

## Preliminary QLD factory design




Redflow has advanced scoping plans to commission a **new manufacturing facility in 2026.** Commencing a jointly-funded feasibility study for a **Queensland-based facility** with the state government**.**

This facility will produce **Redflow's new X10 product,** adopting **highly automated manufacturing processes** to enable a **reduced cost and improved product life**

Queensland can serve as Redflow's **as a global hub**, centralising stack manufacturing for deployment to global assembly centres

**500MWh+**
annual **production target**

**>10x**
increase in Redflow's **annual production capacity**

**150+**
Direct **jobs generated in QLD**

*Subject to business plan approval*

Source: Preliminary internal Redflow QLD factory employment projections; Preliminary internal Redflow QLD factory design / production plans

# The energy transition in Queensland is a powerful example of Redflow's opportunity


Responsible for ~30% of national emissions, **Queensland's energy transition will be critical** to Australia meeting Paris Agreement obligations

In particular, Queensland holds a **strong foundation for our battery industry to grow;**

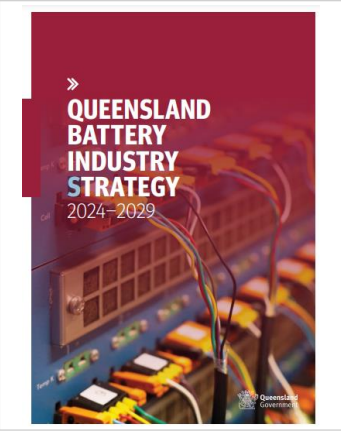
Largest national **rooftop solar penetration**

Existing **mining and refining capabilities** of critical battery minerals

30 65.38
Zn
Zinc

**Established local zinc ecosystem**, e.g., multiple zinc mining and refining sites

National leader in large-scale **firmed renewables and infrastructure**




Queensland's **energy transition and battery industry growth** is expected to be accelerated by Queensland Government's **$62bn Energy and Jobs Plan** and **$570M Battery Industry Strategy**, which earmarked over 25GW of new and existing renewable energy by 2035

This will be enabled by:

**~10 GW of energy storage planned by 2035**

**Retirement of entire coal fleet** by FY35

**~1500km of new high voltage backbone transmission**

**Smarter grid** to support ~11GW of solar, ~6GW of batteries in homes / businesses

*The Queensland Battery Industry Strategy establishes Queensland as a **global leader in the flow batteries** needed to store renewable energy and advanced battery technologies.*

**Queensland Premier, Steven Miles**

redflow

Source: Queensland Battery Industry Strategy; Queensland Energy and Jobs Plan; Climate Energy Finance - Queensland's Energy Transformation: From Coal Colossus to Renewable Energy Superpower

# Redflow has a clear and focused plan to scale-up

## Delivered

- ✓ Filled production capacity out to early 2025 with customer orders.
- ✓ Detailed scale-up plan for Thailand factory to increase production capacity to 40 MWh/year.
- ✓ Design optimisation for cost of ZBM3.
- ✓ Preliminary design of new X10 product.
- ✓ Multi-MWh projects with option to further expand in project size.

## Next steps

### Manufacturing

- ☐ Implement Thailand factory scale-up.
- ☐ Detailed design / planning of QLD factory (capital equipment, plant design, site selection, etc.).
- ☐ Ongoing supplier diversification and partnerships.

### Design

- ☐ Implement design / process improvements in Thailand facility.
- ☐ Finalise new X10 design.

### Finance

- ☐ Progress discussions with government debt and export finance agencies.
- ☐ Working capital financing solutions.
- ☐ Drive progressive gains in product margin.

### Commercial

- ☐ Lock in ZMB3 customer pipeline orders.
- ☐ Engage on X10 scaled future commitments.

redflow

# Appendices

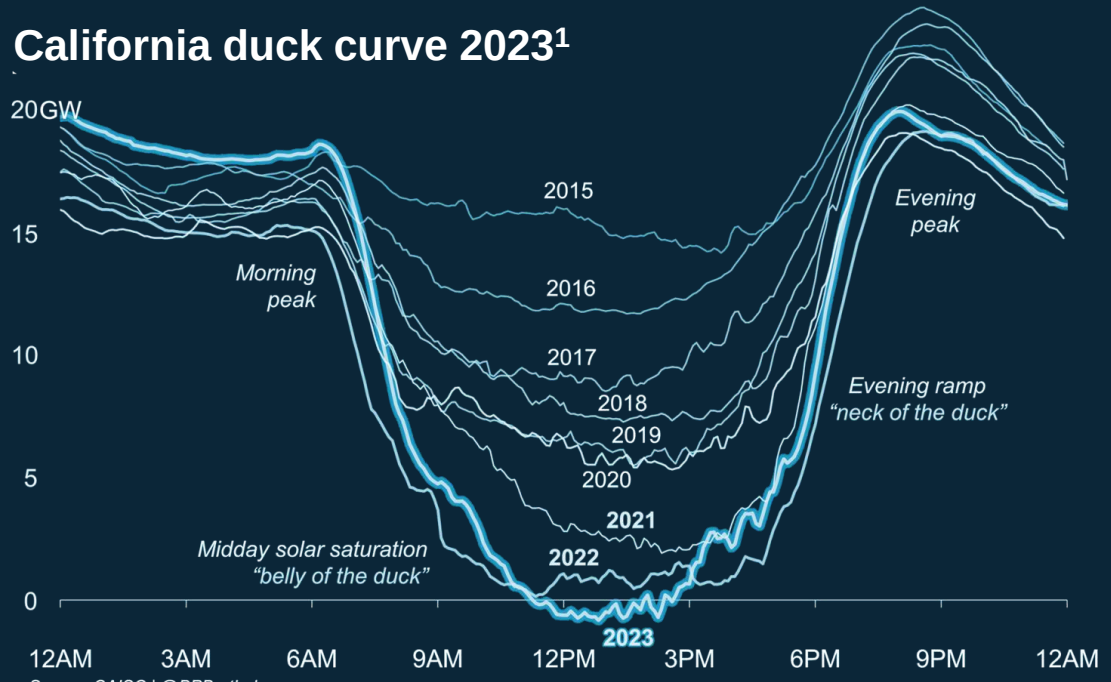
Bureau of Meteorology weather radar emissions reduction and reliability project

*NSW, Australia*

# LDES increasingly seen as crucial to the energy transition

## Renewables acceleration generates new challenges that LDES is best equipped to solve

### California duck curve 2023[1]




*Source: CAISO | @BPBartholomew*
*Note: Net load shown is demand minus utility-scale wind and solar*

> *"Long-duration energy storage is not a luxury, but a necessity. This is not an economic paradigm, it's a reliability paradigm."* [3]

### Key LDES applications

- Bulk energy shifting
- Renewables integration
- Energy arbitrage
- Back up source

### Redflow aligned to core LDES requirements

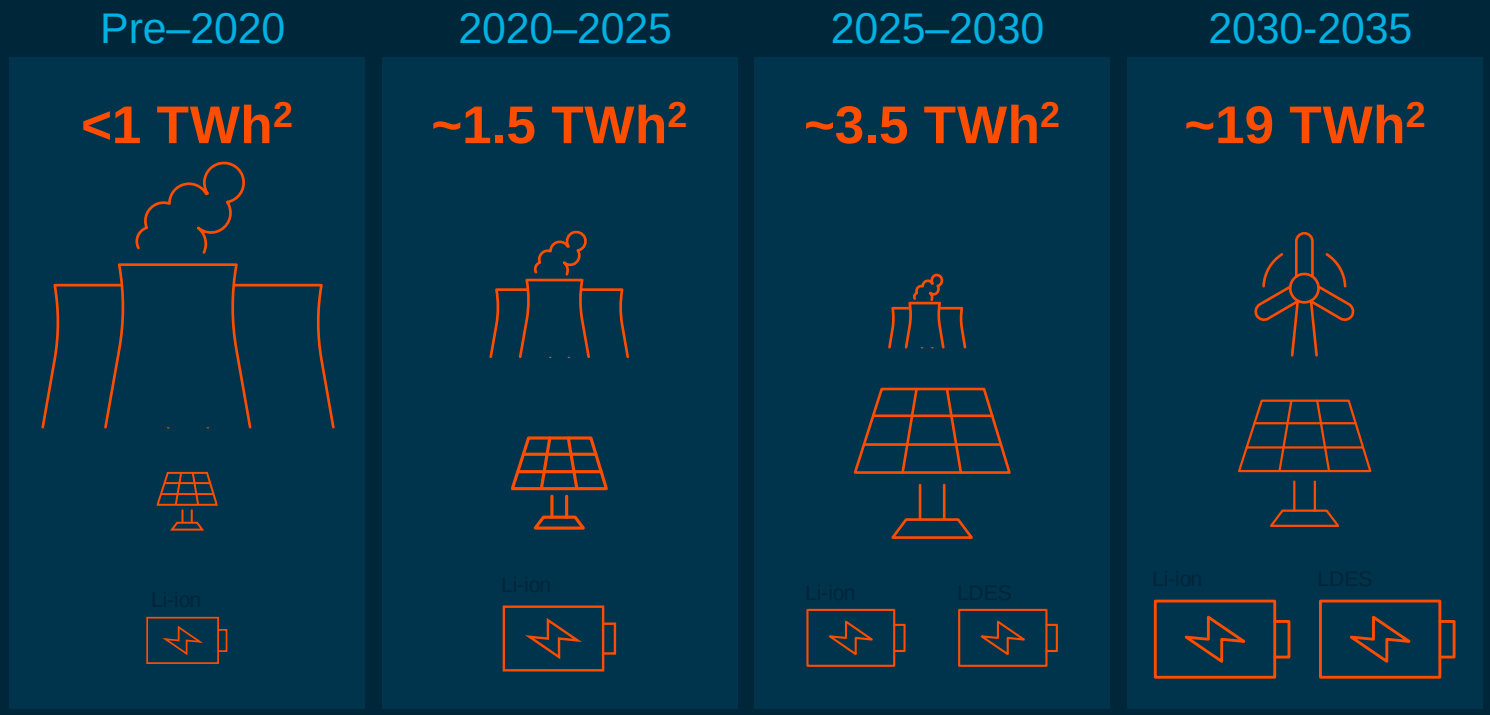
- Use 100% energy
- Flexible duration
- Frequent cycling & long life
- High temperature tolerance
- Fully recyclable and no fire risk

redflow

1. CAISO
2. Source: PTK analysis. Illustrative only
3. PNNL.gov, *Long-Duration Energy Storage: The Time Is Now*, May 2023, Citing PNNL study in Journal of Energy Storage, *Defining long duration energy storage*, April 2023

# Renewables penetration drives LDES adoption

## Global need of 8–24-hour duration LDES: 38TWh+ by 2040[1]




Demand met by gas

LDES demand established

**LDES critical**

**LDES penetration has been low in the past**
+ High proportion of baseload from coal and gas.
+ Renewables supplemented the core grid.

**Fossil fuels declining as source of baseload**
+ Grids increasingly powered by renewables.
+ Coal and gas generation prevent climate goals.
+ Phasing out of coal and gas peakers.
+ Lithium for short term energy storage needs.

**Renewables powered grids needs LDES**
+ Renewables require LDES to shift power to match demand (intra-day, multi-day).
+ Growing demand for 24/7 renewable PPAs.
+ Total electricity demand increasing 2x[3].

**Market looking beyond lithium**
+ Requirements for 8+ hour discharge capability.
+ Lithium supply constraints and EV demand.
+ Customer concerns about lithium fire safety.
+ LDES already viable for long-duration applications.

1. LDES Council: *Net Zero Heat report*, 2022
2. Cumulative energy installed capacity from LDES Council: *Net Zero Heat*, 2022
3. Cornwall Insight – https://www.cornwall-insight.com/press/evs-are-predicted-to-increase-electricity-demand-by-71-6twh/

redflow

# Strong value proposition build on core advantages of Redflow's technology

Core chemistry, operational experience, low-cost deployment and unique features

**Density**
Highest across commercial flow batteries[1]

**Core chemistry**
ZnBr one of the lowest $/kWh chemistries[2]

**Modularity**
Flexible from 200 kWh to 100s MWh

**Hibernation mode**
Indefinite standby capability

**Supply chain**
Mature and abundant zinc supply chain

**Deployment**
Low cost, rapid drop-in deployment model

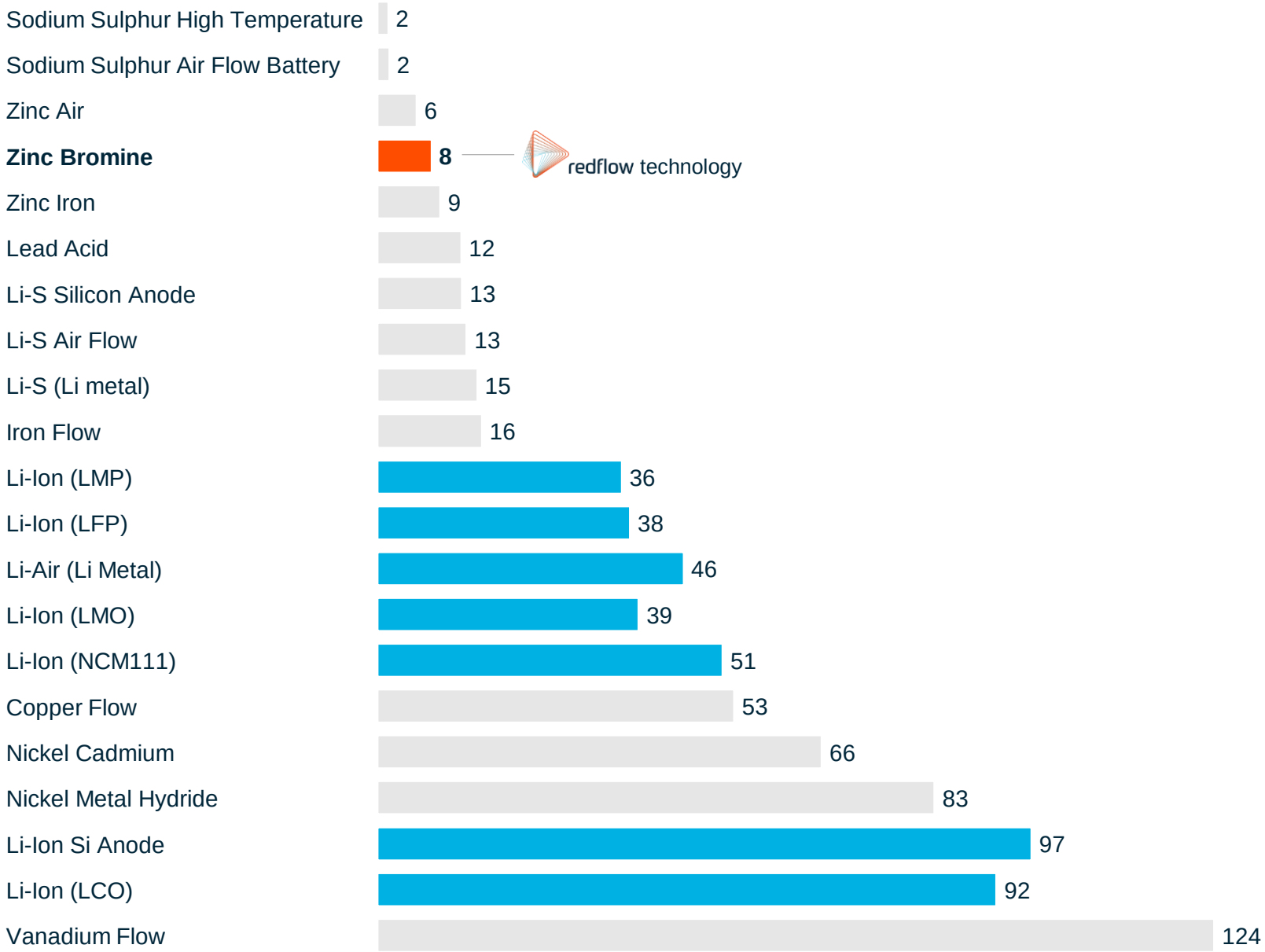
> *If you look past lithium ion, probably **zinc is the next metal that's the most popular for energy storage**, and it does appear to be able to provide performance equal to or better than lithium if given a chance*
>
> **Mike Gravely, Californian Energy Commission[3]**

1. *Redflow analysis based on publicly available information and industry literature as of 30th August 2023*
2. *The Future of Energy Storage, MIT, 2022*
3. *Forbes, California Sees Zinc As Likely Successor To Lithium-Ion In Energy Storage, October 2022. Bold added for emphasis*

# Zinc-bromine chemistry has fundamental a cost advantage vs. other chemistries

## Estimated cost of raw material for different battery chemistries

USD/kWh




Li-Ion battery technology

Other battery technologies

Note: This data indicates the estimated relative chemical cost of storage for Zinc Bromide chemistries. This is not a statement of Redflow' s chemical cost of storage, which may differ from this data.

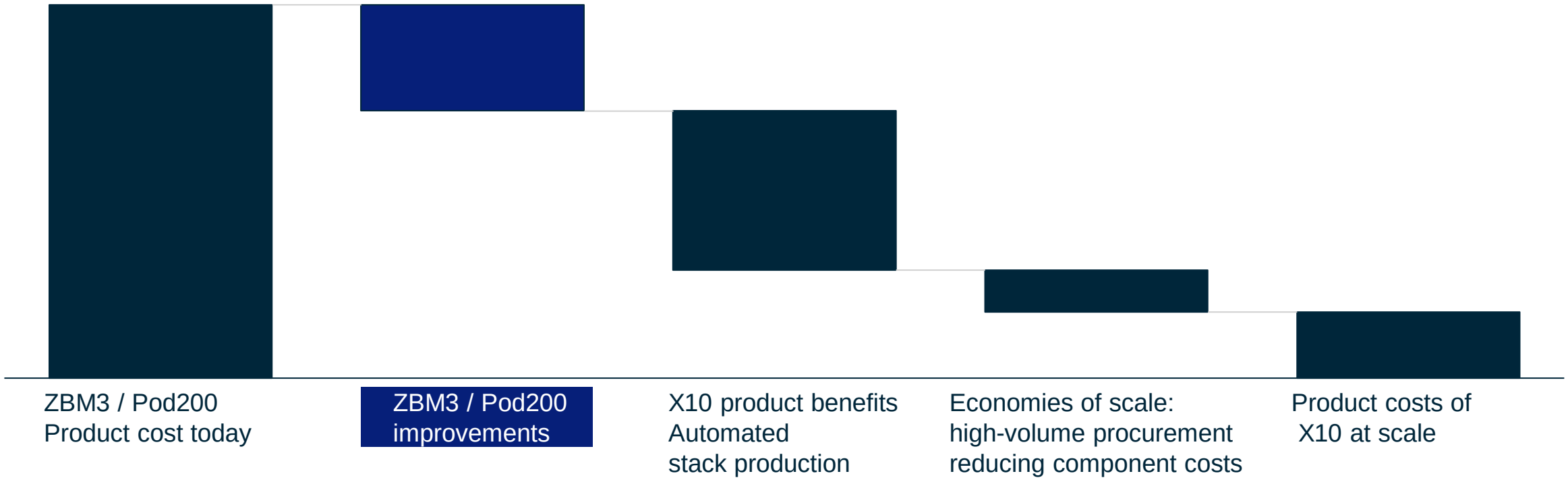
Source: MIT Future of Energy Storage study 2022

redflow

# Our X10 and manufacturing scale up plan will allow us to achieve a step change in product costs[1] and competitiveness

## Redflow's product cost down targets[1,2,3]

USD/kWh, illustrative




1 Product costs are the direct material and labour costs of manufacturing and installing at the customer's site an 8+ hour system. It excludes the cost of delivery from Redflow's factory to site and indirect costs.
2 Product costs including target cost reductions based on expected bill of materials, internal management estimates and external analysis.
3 Product cost reduction assumptions and actions required to achieve reductions described overleaf. Outcomes are not guaranteed and are subject to usual commercial risks including changes of a range of technical, operational and commercial factors.

# Target product cost reduction initiatives

NON-EXHAUSTIVE

| Cost down levers | Key initiatives |
|---|---|
| **ZBM3 / Pod200 improvements** | + Optimise electrolyte formulation, e.g., reducing 10% of electrolyte without compromising performances.<br>+ Improve procurement of key components, e.g., DC-DC converters.<br>+ Eliminate stack cooling fans to reduce costs and enhance energy efficiency. |
| **X10 product benefits** | Technical improvements specifically designed for efficient manufacture at scale and installation including:<br>+ Improve stack battery controller allowing the control of multiple stacks with one control unit.<br>+ Increase stack busbar voltage to reduce copper costs and increase electrical efficiency.<br>+ Fit batteries directly into containerised enclosure with integrated cooling/heating systems allowing the elimination of redundancies within the current thermal management system.<br>+ Design containerised enclosure to scale efficiencies in the installation process.<br>+ Iterate tank and pump assembly to improve operational efficiency of tank and pump system<br>+ Increase stack surface area and higher system energy density |
| **Automated stack production** | Shift from manual stack manufacturing process to (semi-) automated assembly line resulting in:<br>+ Reduced materials quantity due to shift towards high precision manufacturing process vs manual process.<br>+ Higher production quality increasing factory yield and reducing scrap costs.<br>+ Increased plant utilisation through stack continuous production. |
| **Economies of scale: high-volume procurement reducing component costs** | + Procure large volume of the externally sourced components to achieve lowest unit cost. |

*Redflow considers that the target product cost reductions are reasonably achievable based on available information, internal management estimates and external third-party analysis. However, outcomes are not guaranteed and are subject to usual commercial risks including the risk that a range of technical, operational and commercial parameters may change.*

# We see strong catalysts that the global LDES market & opportunity for Redflow will accelerate in the next 12 months

| Catalyst | Key examples | Redflow Impact & Action |
|---|---|---|
| **Government / regulatory policies** | **Policies are being enacted or contemplated globally to foster LDES market growth**<br><br>**The Supercharging Battery Storage Initiative,** led by the EC, Australia, US, and Canada, aims to **reduce energy storage costs and establish a sustainable, transparent, diversified**, and responsible supply chain[1]<br><br>The US Department of Energy's **Long Duration Storage Shot** aims to decrease the **cost of grid-scale energy storage by 90%** for 10+ hours of duration within ten years[1]<br><br>**The Battery Energy Storage System** consortium aims at securing **5GW of battery storage** deployments in low-middle income countries[1] | Only Australia LDES battery on **US Department of Energy** project portfolio<br><br>Initial 4MWh contract with **Energy Queensland**<br><br>34 MWh contract with **California Energy Commission**<br><br>**QLD Government** jointly funded feasibility study |
| **Investments** | **>US$58b[2] in investments made by governments, funds and corporates in LDES projects around the world since 2019**<br><br>~US$10b venture capital funding[3] made in energy storage start-ups in 2023 | Redflow is actively engaged with a number of **grant funding and export financing** agencies in Australia with multiple NDAs signed |
| **Demand for scale is growing** | **Customer demand has been driving large scale LDES deployments across the world**<br><br>**480MWh[4] Mornington Battery Energy Storage System** recently announced in Victoria, Australia | **Thailand production capacity is full** for 2024 and early 2025.<br><br>**New manufacturing facility** to be designed for scaled production. |
| **Technological advancements** | **~25-50% decrease in LDES costs driven by technological advancements through 2040 will boost LDES adoption** | **X10 battery** has been evolved for larger scale deployments and significantly lower storage costs |

redflow

1. Respective agency website and press releases
2. Wood Mackenzie 'Long-duration energy storage report 2022
3. Mercom Capital Funding and M&A Report for storage and grid 2023
4. QLD State development and Infrastructure website
5. Mornington BESS website
6. 2022 LDES Council Technology Benchmarking Results (N=26), page 25

# We have a long-term plan for global manufacturing

## Further global scale-up

Engagement of **global manufacturing partners,** low-capex expansion.

GWh+/year production.

**Highly automated** end-to-end manufacturing, bulk procurement of materials, **optimised supply chain.**

**Hyper-localised supply** to **take advantage of subsidies** (e.g. IRA).

## Localised assembly

Assembly of complete battery systems (with Australian produced stacks) **in localised advanced facilities** across key markets / manufacturing hubs **(Australia, USA and Thailand).**

Supporting production of **500-1,000 MWh/year.**

**Highly efficient assembly** processes.

**Potential localised supply**/assembly in delivery markets (e.g. USA) to **take advantages of subsidies** (e.g. IRA).

## Australia: advanced stack manufacturing

Queensland to be facility commissioned in 2026.

Increased production to **500-1,000 MWh/year** by 2030 (initial pilot line production of 175 MWh/year).

**Highly automated stack production,** improvements to manufacturing efficiency and quality.

redflow

# Government support for energy transition provides Redflow with multiple funding options

| | Entity focus | | Latest update |
|---|---|---|---|
| **Australian Federal Government Entity #1** |  | Support AUS scale up manufacturing / operations | + NDA signed<br>+ Initial discussions |
| **Australian Federal Government Entity #2 (renewables focus)** |  | Support for initial prototype projects / facility | + NDA signed<br>+ Multiple discussions |
| **State government (misc.)** |  | Scale up support and product development | + NDA signed<br>+ Detailed discussions and initial due diligence scoping |
| **Australian Federal Government Entity #3** |  | Support AUS scale up manufacturing / operations | + NDA signed<br>+ Initial discussions |

redflow

*Redflow is part of our growing local ecosystem of battery technology companies and we are proud to support them to fast-track the development of their tech and potentially manufacturing their products right here in Queensland.*

**Deputy Premier, Treasurer and Minister for Trade and Investment, Cameron Dick[1]**

# Feasibility study for QLD will allow us to rapidly advance our X10 and scale manufacturing modelling

- The Queensland's Government's Queensland Critical Minerals and Battery Technology Fund (QCMBTF) has allocated **$1.12m in grant funding to Redflow**. **The grant will reimburse Redflow** for part of the total $3.2m project cost.
- The **funding is for the development and construction of a large-scale zinc-bromide flow battery prototype and a feasibility study** for the establishment of a fully automated large-scale battery manufacturing facility in Queensland.
- The $100m QCMBTF fund provides for **initial feasibility funding and scale up financing (debt or equity) of up to $30m**.
- Anticipated to be **completed by the end of CY2024**.

**Anchor demand**

**Endowment effects**

**Location based factors**

**Government stimulus & support**

# Redflow has a world-class team

**Tim Harris**
Chief Executive Officer & Managing Director

CHORUS · BT

**Mark Higgins**
President, North America & Chief Commercial Officer

PG&E · SunEdison · FRV

**Steve Hickey**
Chief Technology Officer

Raytheon Technologies · MAGNETICA

**Tim MacTaggart**
Chief Operating Officer

QUT bluebox · The University Of Queensland AUSTRALIA

**Eric Chainet**
General Manager

REHAU · GOODPACK

**Michael Hipwood**
Chief Financial Officer

BOEING · TRITIUM · Hysata

**Juergen Reitz**
Chief Engineer

Ford

**Brett Johnson**
Independent Non-Executive Chairman

**Adele Fraser**
Non-Executive Director

**John Lindsay**
Non-Executive Director

**David Brant**
Non-Executive Director

redflow

# Profit & Loss

- H1 FY24 revenue was affected by low production in the Thailand factory. This issue has been discussed in previous presentations and is now resolved.
- Other income is primarily R&D tax rebate.
- Raw materials and consumables used includes the increase in warranty provision $3.4m.

| A$'000 | H1 FY24 | H1 FY23 |
|---|---|---|
| **Revenue** | **62.8** | **645.6** |
| Other Income | 1,153.5 | 2,344.3 |
| **Expenses** | | |
| Raw Materials and Consumables Used | (7,128.3) | (2,555.2) |
| Other Expenses | (6,967.3) | (6,647.4) |
| **Profit/ (Loss) before Income Tax** | **(12,879.2)** | **(6,212.6)** |
| Income Tax Expense | (8.1) | (12.1) |
| **Profit/ (Loss) after Income Tax** | **(12,887.2)** | **(6,224.7)** |
| Other Comprehensive Income | 73.4 | 88.2 |
| **Total Comprehensive Loss** | **(12,813.8)** | **(6,136.5)** |

*Sum of individual items may not equal total due to rounding effects*

# Balance Sheet

## Net cash position of $9.7m as of end Dec 23

### Current assets

+ The $11.6m raise contributed to the increase in cash.
+ Received R&D tax rebate 5 months ahead of previous period hence the decrease in trade and other receivables.

### Current liabilities

+ The warranty provision was revised conservatively following management's assessment of the number of batteries sold under warranty, battery performance, potential contract exposure and the cost of meeting warranty obligations, based on historical experience and current knowledge.

| A$'000 | 31 Dec 23 | 30 June 23 |
|---|---|---|
| Cash and cash equivalents | 9,697.2 | 5,512.9 |
| Trade and other receivables | 1,144.3 | 2,563.9 |
| Inventories | 3,294.3 | 2,737.5 |
| Other current assets | 690.0 | 706.1 |
| **Total current assets** | **14,825.7** | **11,520.3** |
| Property plant and equipment | 1,333.0 | 1,633.3 |
| Intangible assets | 539.0 | 501.2 |
| Right of use assets | 173.4 | 249.5 |
| **Total non-current assets** | **2,045.3** | **2,384.0** |
| **Total assets** | **16,871.0** | **13,904.3** |
| Trade and other payables | 2,450.3 | 1,701.5 |
| Other current liabilities | 1,193.7 | 572.8 |
| Provisions | 5,621.5 | 2,190.3 |
| **Total current liabilities** | **9,265.5** | **4,464.7** |
| **Total non-current liabilities** | 200.0 | 324.2 |
| **Total liabilities** | **9,465.5** | **4,788.9** |
| **NET ASSETS** | **7,405.5** | **9,115.4** |

*Sum of individual items may not equal total due to rounding effects*

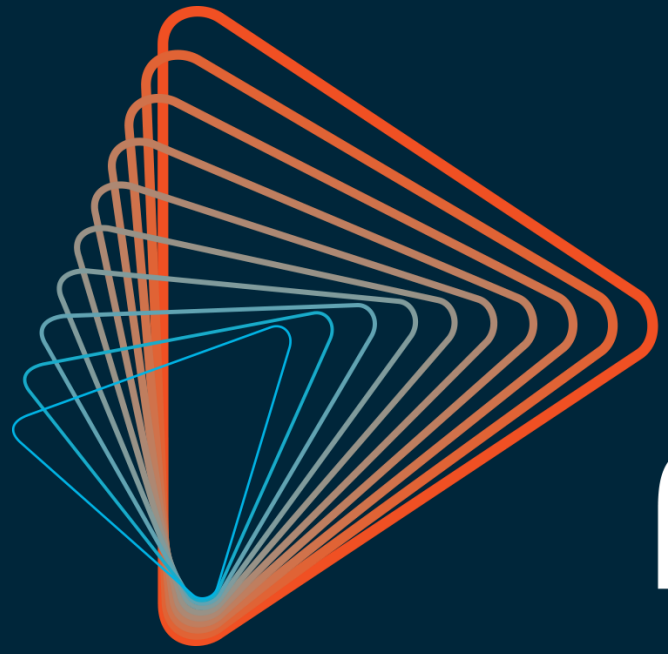
redflow

# Cash Flow

- As mentioned above, supplier quality issues impacted production of orders.
- Payments to suppliers and employees increased in preparation of ramp up.
- As discussed previously R&D tax grants paid earlier than historical trends.
- Capital raising activities:
  - $11.6m raised from successful entitlement offer and placement.

| A$'000 | H1 FY24 | H1 FY23 |
|---|---|---|
| **Cashflows from operating activities** | | |
| Receipts from customers | 243.7 | 779.6 |
| Payments to suppliers and employees | (9,132.7) | (8,081.0) |
| Grants R&D tax incentive received | 2,456.8 | 36.6 |
| Other | 147.7 | 37.5 |
| **Net cash (outflows) from operating activities** | **(6,284.5)** | **(7,227.4)** |
| **Cashflows from investing activities** | | |
| Payment for property plant and equipment | (273.6) | (300.6) |
| Payments for intangible assets | (56.9) | (99.6) |
| Proceeds from sales of PP&E | - | 9.2 |
| **Net cash (outflows) from investing activities** | **(330.5)** | **(391.0)** |
| **Cashflows from financing activities** | | |
| Proceeds from capital raising activities | 11,642.7 | 10,621.6 |
| Transaction costs related to equity issues | (752.8) | (540.3) |
| Principal elements of lease payments | (84.9) | (84.0) |
| **Net cash (outflows) from financing activities** | **10,805.0** | **9,997.3** |
| **Net increase/(decrease) in cash and cash equivalents** | **4,190.0** | **2,379.0** |

*Sum of individual items may not equal total due to rounding effects*



redflow